DOCUMENT RESUME

ED 047 311 AL 002 753

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TITLE	Implications of the Linguistic Differences Between Black-Ghetto and White-Suburban Classrooms.
INSTITUTION	Missouri Univ., Columbia. Center for Research in Social Behavior.
SPONS AGENCY	National Science Foundation, Washington, D.C.
PUB DATE	Feb 71
NOTE	19p.; Paper presented at the Annual Meeting of the American Educational Research Association, New York, N.Y., February 1971
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	Caucasian Students, *Classroom Communication, Discourse Analysis, Interaction Process Analysis, Language Research, Negro Students, *Racial Differences, Research Methodology, *Social Dialects, Social Differences, *Sociolinguistics, Syntax, Teacher Role

ABSTRACT

This paper, one of a group prepared by the Classroom Interaction Project of the University of Missouri's Center of Social Behavior (see related documents AL 002 750-752), is organized into two parts. The first section, a presentation of results of research into the sociclinguistic distribution of syntactic structures in black and white classrooms, is divided into three categories: those dealing with grade level differences between (1) black and white pupils, (2) teachers of black pupils and teachers of white pupils, and (3) the total sets of teachers and pupils. Findings did not support the two major hypotheses that (1) white pupils use complex language more frequently than black pupils, and (2) complexity of language increases with grade level. It was found rather that black and white pupils in the sample were in different language development cycles, in which whites attained maximum use of complex structures sooner than blacks but where blacks used more complex structures once their peak of development had been reached. It was also found that the classroom language of the teacher tended to reflect that of the pupils. The second section of the paper discusses the implications of the research for language research as well as for education. (FWB)

ED047311

IMPLICATIONS OF THE LINGUISTIC DIFFERENCES BETWEEN BLACK-GHETTO AND WHITE-SUBURBAN CLASSROOMS*

by

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AL 002 753

*The research leading to the results reported here have been supported by funds from the National Science Foundation, Grant No. GS3232 and by Institutional Research funds to the Center for Research in Social Bheavior at the **University** of Missouri, Columbia, Missouri.

This paper is organized into two parts. One section deals with a presentation of results concerning the sociolinguistic distribution of syntactic structures in black and white classrooms and the other section deals with the implications of the research in general. Thus, the first half extends the discussion of the empirical results reported on in this session and the second half attempts to provide a framework for discussing implications.

Our presentation of findings will be divided into three categories: (1) those dealing with grade level differences between black and white pupils; (2) those dealing with grade level differences between teachers of black pupils and teachers of white pupils; and (3) those dealing with grade level differences between the total sets of teachers and pupils.

In order to comprehend the results of our comparison of syntactic structure in black and white classrooms it is necessary to understand five technical terms: embedding, conjoining, adjoining, simplex sentence and natural sentence (see handout A). You will note from Table I and Figures I and II that black first graders use adjoining and conjoining structures significantly less frequently than white pupils. This finding corresponds with the observations of a great many researchers and is mentioned here in passing to provide one indicator of internal validity for the remaining findings to be reported. In addition, this fact about the speech of black first graders corroborates a generally held assumption; the ability of black pupils to manipulate natural language symbols is significantly below that of white pupils. This generalization would be expected to hold for our data which were obtained from racially segregated areas. The white sample was drawn from an upper middle and middle class

school and the black sample from a lower-middle and lower class school. We are presenting only those results which represent significant departures from this preconception. Because both groups used all the structures which were studied it must be remembered that we are reporting on the relative frequency of occurrence of these syntactic structures. Finally, we are assuming that different frequency distributions of language structures reflect important cognitive realities.

Generally, we will assume that greater complexity is to be expected as the grade level increases. Thus, where this generalization does not hold the fact will be the object of special mention. In summary, the two major hypotheses are:

1. White pupils will use complex language more frequently than black pupils.
2. As grade level increases the use of complex language will become more frequent.

Pupils. I refer you to Table I, Figures I, II, and III. You note that the facts represented there describe a state of affairs contrary to those presupposed by both hypotheses. First, black pupils at the eleventh grade consistently use complex syntactic structures more frequently than white eleventh grade pupils. Black pupils in the sixth grade use adjoining structures more frequently and, although the difference is not significant, first grade blacks use embeddings more often. Second, it is certainly not the case that the frequency of complex language use increases with grade level in all instances.

Our explanation for these facts is the following: Black and white pupils are peaking in their language development at different grade levels.

Whites appear to peak with adjoining at or near the first grade; they peak at the sixth grade for both conjoining and embedding. On the other hand, black pupils peak with adjoining and conjoining at the sixth grade and with embedding at or near the eleventh grade. In general, white pupils are attaining maximum use of these structures sooner than black pupils. There appears to be a developmental phasing in which definable structures are preferred at different times and the intensity of the usage reflects the competence-acquiring process.

In spite of the apparent developmental lag of black pupils the fact remains that in the eleventh grade classroom black pupils are using complex language more frequently than their white counterparts, and the sixth grade black pupils use adjoinings more frequently. These findings contradict the assumption that black pupils do not manipulate natural language symbols with the same degree of complexity as white pupils. Teachers of black pupils hear complex structures more frequently from their pupils than teachers of white pupils. This finding raises a great many questions. For example, what leads people to accept the idea that blacks do not manipulate natural language symbols as well as whites? Apparently, black pupils are equipped with sentence-level language structures as well as white pupils; at least, interaction in the classroom suggests this. All students use all the structures but black eleventh graders are joining sentences with adjoining links more frequently than white eleventh graders.

Answers to questions raised by differential distributions of syntax in classrooms, in my opinion, do not lie in these data, but are to be found in differences in discourse units, which we label <u>discursements</u>.

The structures we have reported on are no longer than a natural sentence whereas the differences which teachers and the majority culture are reacting to are the rules of evidence and coherence for the justification of ideas and socio-cultural beliefs. The symbol domain of discursement presupposes multiple sentence entities which have internal structure and testable meaning relationships. These units will ultimately prove to be of more importance to education than the domain of sentences. Thus, if failure rates among black pupils are higher or it their performance is considered inadequate by some criterion, it is not because of a lack of the conceptual apparatus, that is, the level of sentence propositional symbols structures, but because of a lack of socialization to discursement structure norms.

Teachers. A close look at Table II, Figures IV, V, VI suggests that across grade levels, teachers, in general, use complex language structures with about the same frequencies as their pupils. The major exception is conjoining,where teachers of whites do not conform to the pattern of their students (Compare Figures II and IV). Apparently, most teachers are reflecting the pressures of interaction and conforming their speech to that of their pupils. In other words, the pursuit of language structure objectives is being subverted by the teacher's unconscious need to interact with students. The language structure model of the classroom is pupil-population inspired rather than teacher-population inspired. Teachers talk in the way pupils do; the one exception is among teachers of white students. We are assuming that Table II is reflecting Table I rather than vice versa. Our reasons for accepting this conclusion are the following: (1) The peaking in frequency of use of different sets

of structures for students has implications for language acquisition and language development among young people being socialized into the culture which it would not have for teachers. (2) The population of students in the classroom outnumbers the population of teachers. It is assumed that verbal interaction norms are set by the norm of behaviors in the larger population. The pressure upon the teacher to conform is greater than upon the pupils. Thus, the teacher will reflect the student norms. (3) If the frequency of occurrence of these language forms is indeed developmental, then the pupils use the forms they do for reasons over which they have very little control. Black pupils cannot use adjoinings as frequently as whites in the first grade because their developmental burst hasn't yet occurred. Presumably teachers could use more adjoinings. This could be tested by shifting a teacher into different grade levels. There are other arguments which suggest the direction of influence is pupil to teacher rather than the other way round. But these should suffice to make the claim possible.

If it is true that pupils in the classroom are influencing teachers to use the syntactic structures they are using, then it could also be true that teachers are using the same rules of coherence and evidence that pupils are using. If it is true that developmental pressures determine the complexity of syntactic structures used, then it may be that developmental pressures determine the kinds of discursement structures used. All of these issues remain to be explored in our research.

Pupils and teachers. Table III and Figures VII, VIII and IX suggest a high degree of overall pattern sameness in the frequency of occurrence of complex syntactic structures in the classroom. Just as

grade level differences for black and white pupils provide evidence of social dialect differences according to race it will probably be found that there are social dialect differences from social situation to social situation. Thus, we could expect to find these syntactic profiles differing from those that would emerge from a study of family interaction, barroom interaction, etc. If there is something to be called the language of the classroom it should be discoverable in a comparative study of different social situations of these kinds.

In summary it is possible to state that black and white pupils are in different language development cycles. These differences in developmental phases probably stem from subcommunity derived dialects. In the classroom the language of the teacher appears to reflect the language of the pupils. We suggest that at the level of sentence structure both black and white pupils control the same forms. We also suggest that the differences that make a difference in the classroom are probably to be found in multi-sentence configurations.

We move now to the second part of this presentation which will include a discussion of the implications of the research in general and the implications of the findings as they relate to education.

The implications of this research and these findings can be classified in at least two categories: general and educational. General implications bear upon the elucidation of the nature of natural language symbols.

The objective in studying the verbal messages that are exchanged in classroom interaction is to investigate the nature of knowing and the

processes leading to it. It is assumed that the ability to manipulate symbols lies at the heart of the process of coming to know. That is, the process of moving from knowing to knowing is to be understood by gaining insight into the nature of symbols and how they are manipulated. It is further assumed that there are three types of symbols: terms, sentences, and discursements. We assume that much of the knowledge that is educationally relevant is ultimately arrived at by the ability to manipulate these three types of symbols. One characteristic of teaching, then, is the manipulating of symbols in such a way as to induce in the learner the process of cognitive transformation from the set of known symbols and the set of actual configuration types to expanded sets. Learning, involving symbols, takes place by integrating the unknown, the to-be-learned, into the known. Thus, it is assumed that coming to know is a process of integrating the unknown into the known by means of symbols and their relationship types.

Charles Morris and others have propose that symbols can be studied syntactically, semantically, and pragmatically. Syntax involves symbol-symbol relationships; semantics involves symbol-referent relationships; and pragmatics involves symbol-user relationships. Our research looks selectively at different aspects of all these relationships.

The study of groups in natural contexts of interaction where the relationship between characteristics of the participants and their speech are the objects of investigation is a pragmatic study. This research has implications for the study of specific types of interaction situations such as the classroom and for the comparison of symbol-user relationships across types of situations within a language community and across language

SYMBOL RELATIONSHIPS

Syntax	Semantics	Pragmatics
Symbol--Symbol	Symbol--Referent	Symbol--User
word--word word--sentence word--discursement sentence--sentence sentence--discursement discursement--discursement	word sentence ≥ referent discursement	word sentence ≥ user discursement

communities. For example, the findings which indicate that there is a correlation between the frequency of use of certain syntactic structures and race is a relationship of this kind.

Barron's paper where relationships between race and sex of speaker and grammatical case are shown is a further example of the study of symbol-user interrelations.

Although we have not reported on it here we feel that one of the major implications of our research relates to the elucidation of discursement types. It is probably the case that teachers and pupils share essentially the same word and sentence language structures and that differences between the two, if they are presumed to exist, exist at the discursement level.

This is by no means an adequate survey of the general implications of these results and this kind of research. Nevertheless, we hope enough has been stated to suggest that general implications exist.

In addition to the broader implications of this research, there are those which relate more specifically to education. Let me select one example. Assume that a prerequisite to the study of certain subject matter is the control of one or more adjoining structures. Then, obviously, pupil competence in adjoining must precede instruction in the subject matter. Competence in natural language manipulation must precede competence with specific domains of subject matter.

In summary, our research suggests a linguisticization of educational research. Our ability to assess teacher competence and pupil achievement in language instruction and use must come to rely more

heavily on linguistic theory and methodology through which it is possible to analyze the symbols upon which the pedagogical enterprise is based.

TABLE I
Differences Between the Percentage of Embedding, Conjoining and Adjoining in the Speech of Black and White Students by Grade Level

Black and White Students by Grade Level	Complexity Facets		
	Embedding	Conjoining	Adjoining
First Grade	NS	W > B****	W > B****
Sixth Grade	W > B****	NS	B > W****
Eleventh Grade	B > W****	NS	B > W**

TABLE II
Differences Between the Percentage of Embedding, Conjoining and Adjoining in the Speech of Teachers of Black and White Students by Grade Level

Teachers of Black and White Students by Grade Level	Embedding	Conjoining	Adjoining
First Grade	NS	W > B*	W > B****
Sixth Grade	W > B****	B > W***	B > W***
Eleventh Grade	NS	W > B****	W > B**

TABLE III
Differences Between the Percentage of Embedding, Conjoining and Adjoining in the Speech of Teachers and Pupils by Grade Level

Teacher and Students by Grade Level	Embedding	Conjoining	Adjoining
First Grade	NS	T > S**	NS
Sixth Grade	NS	NS	NS
Eleventh Grade	NS	NS	NS

*=p < .10
**=p < .05
***=p < .02
****=p < .01

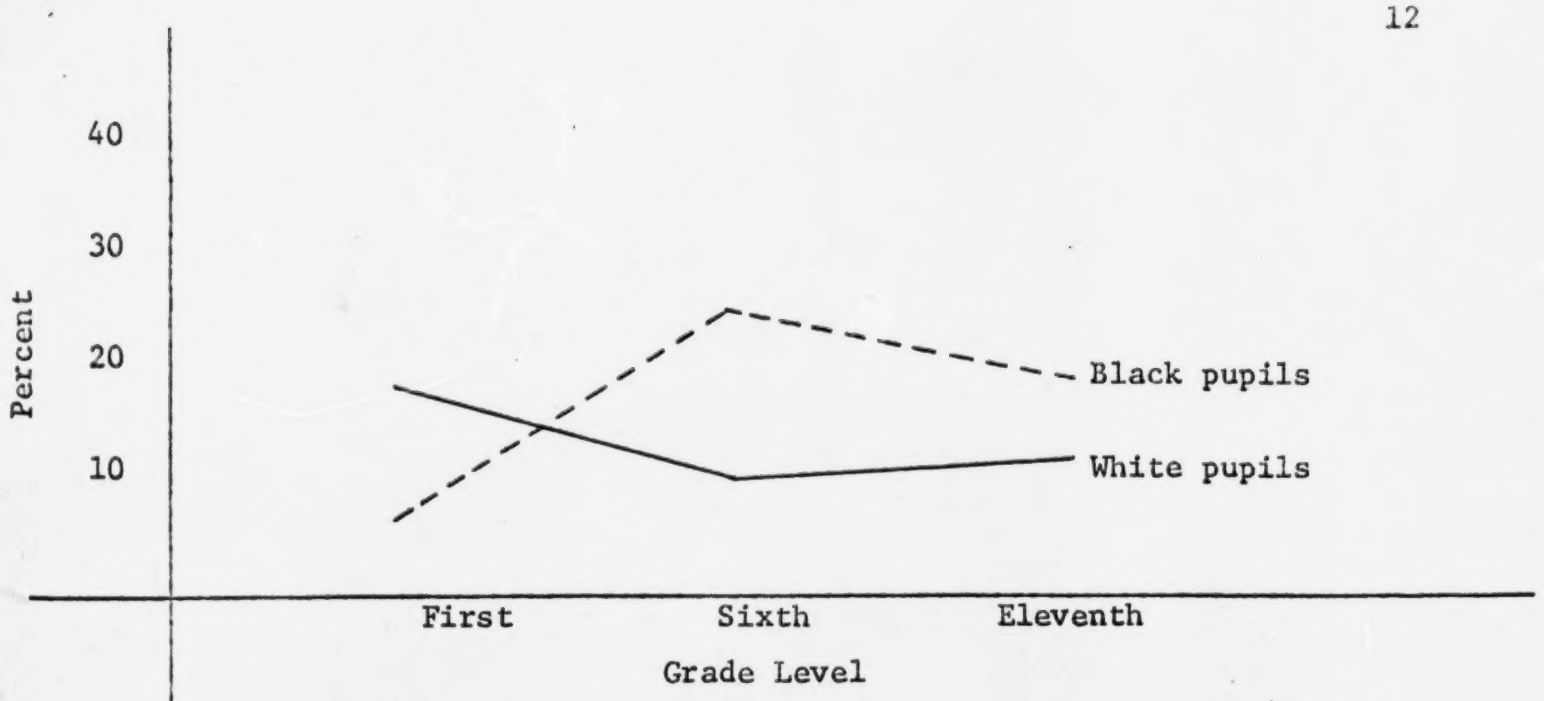

Figure I. Percent of adjoining in the speech of black and white pupils by grade level.

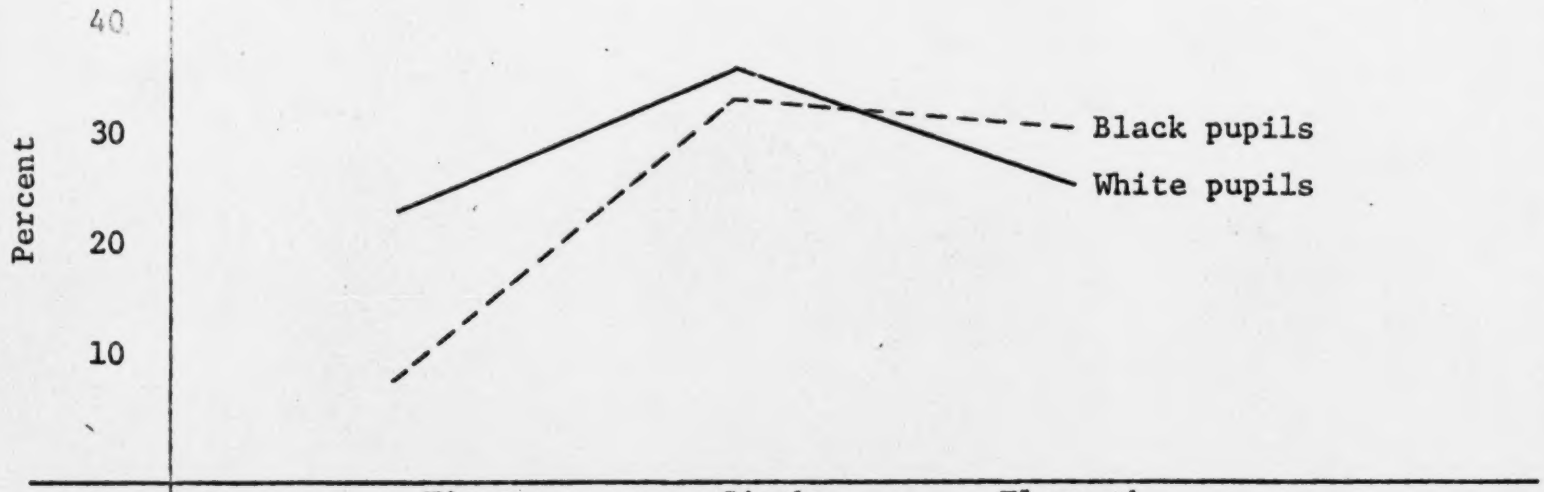

Figure II. Percent of conjoining in the speech of black and white pupils by grade level.

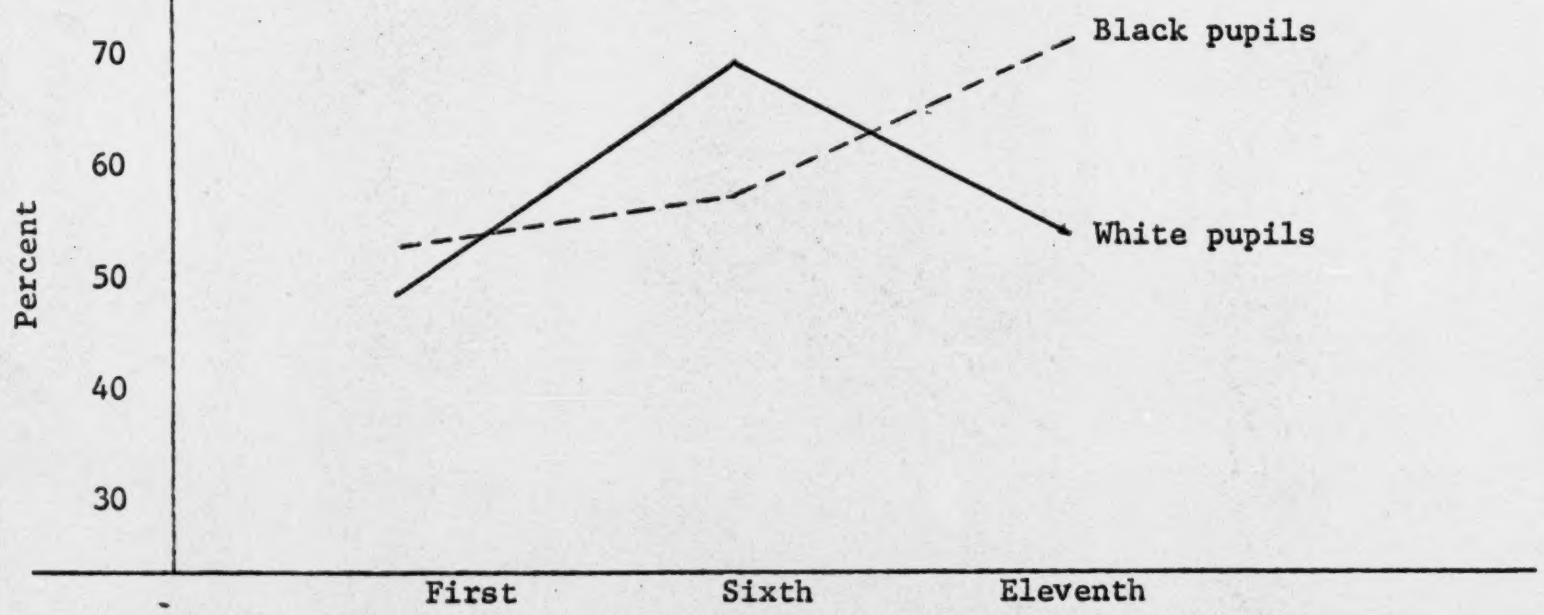

Figure III. Percent of embedding in the speech of black and white pupils by grade level.

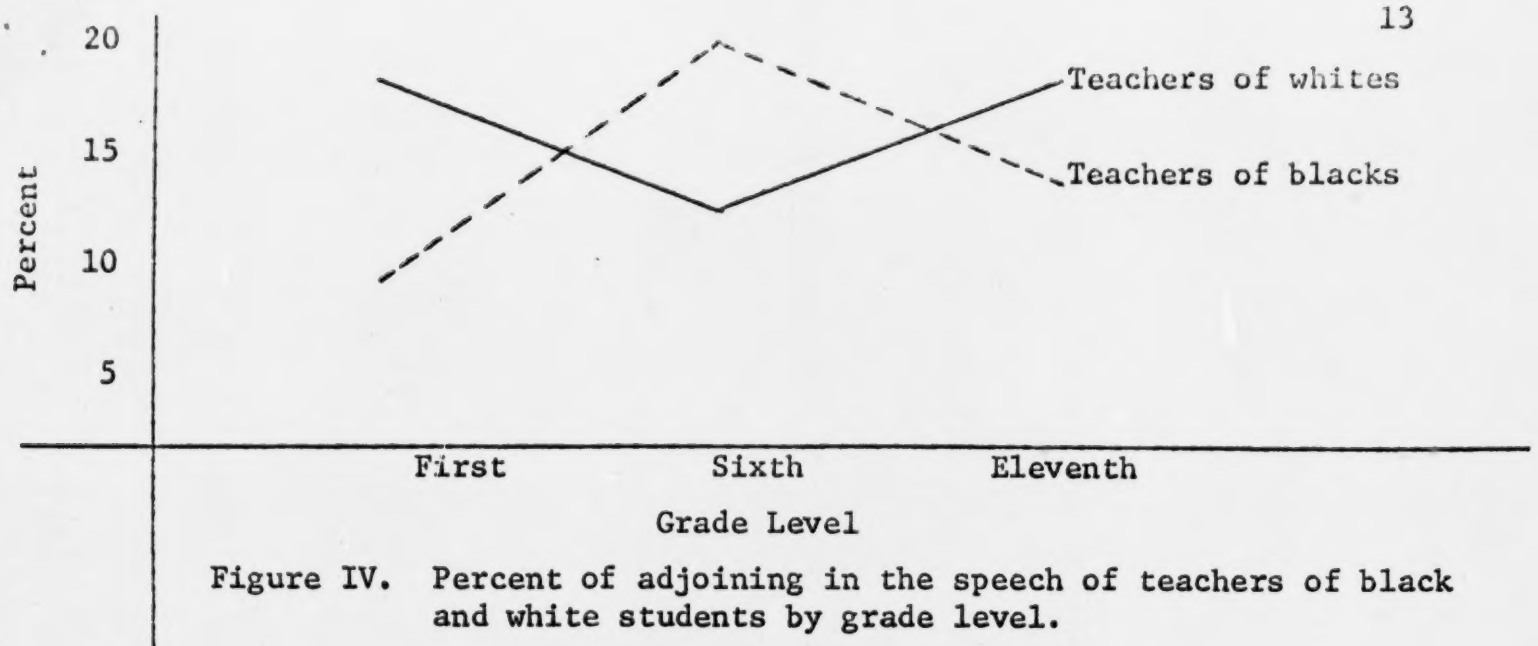

Figure IV. Percent of adjoining in the speech of teachers of black and white students by grade level.

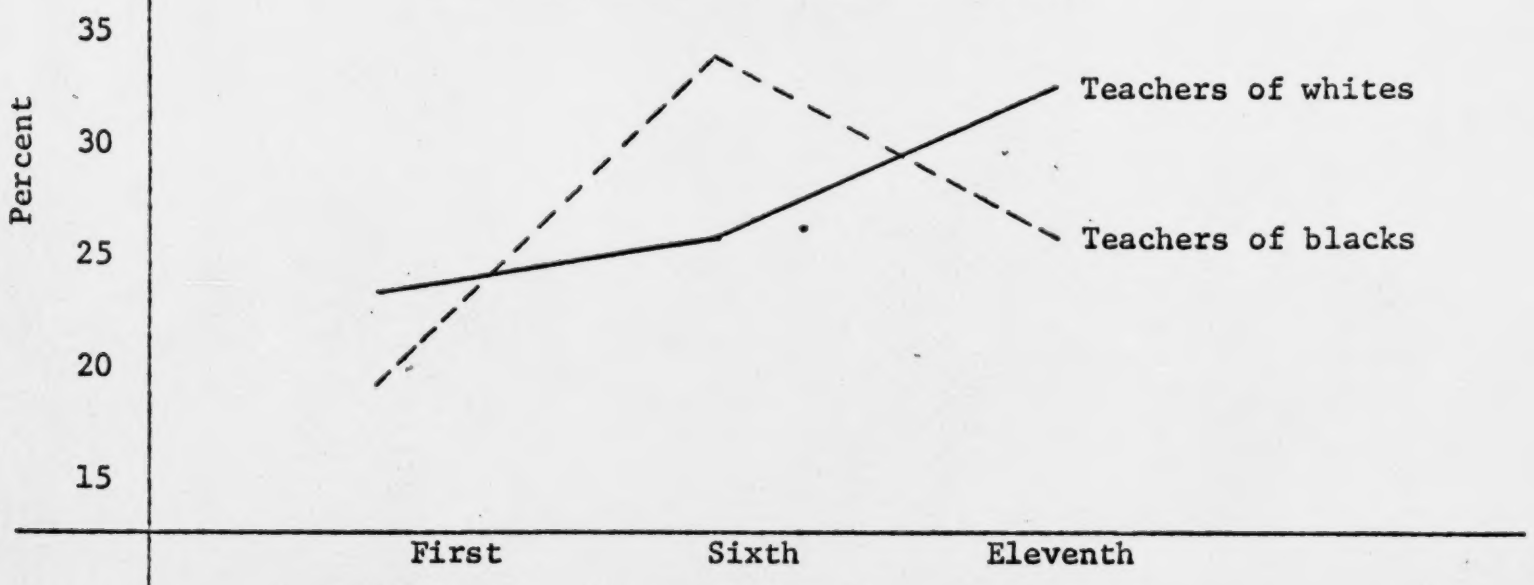

Figure V. Percent of conjoining in the speech of teachers of black and white students by grade level.

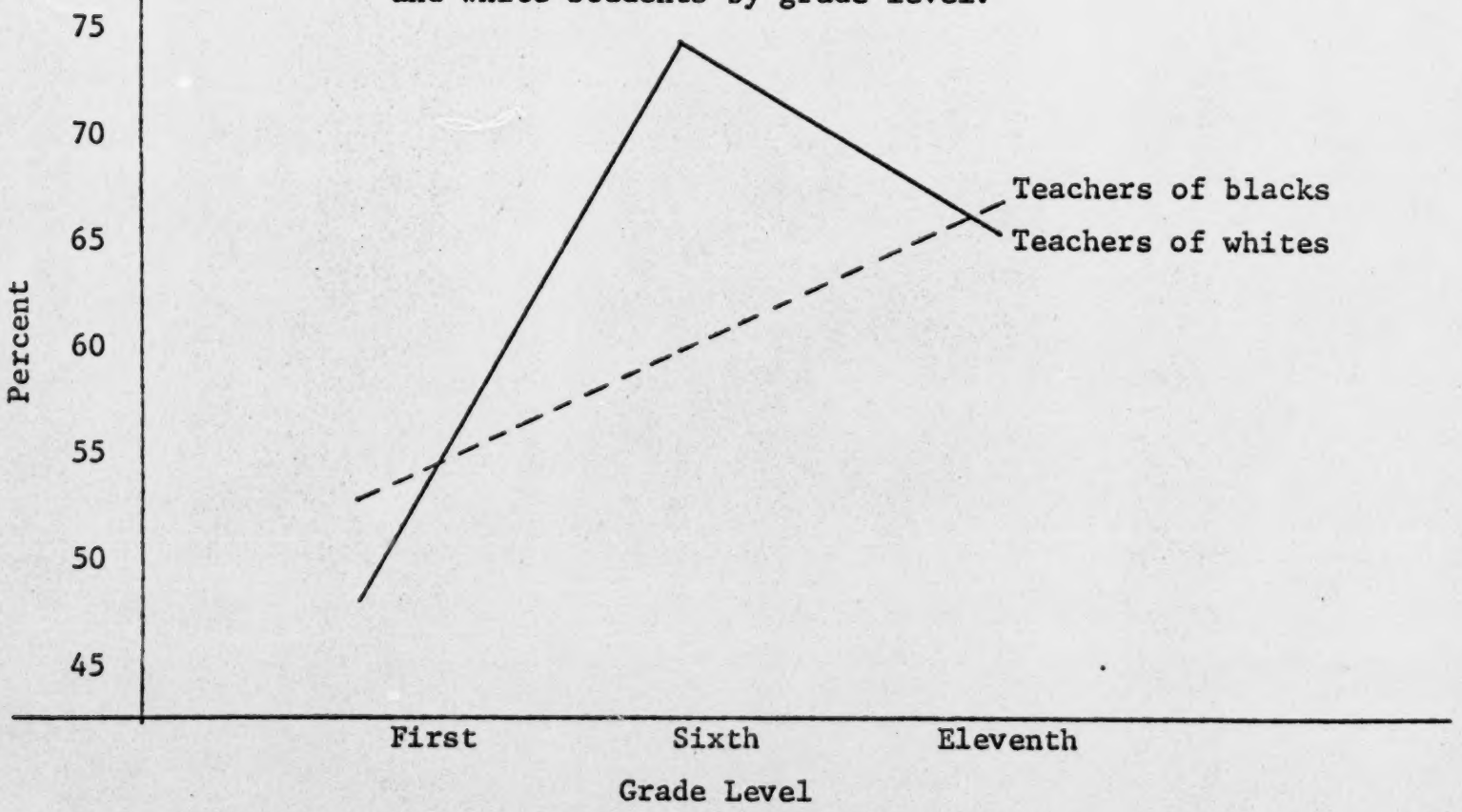

Figure VI. Percent of embedding in the speech of teachers of black and white students by grade level.

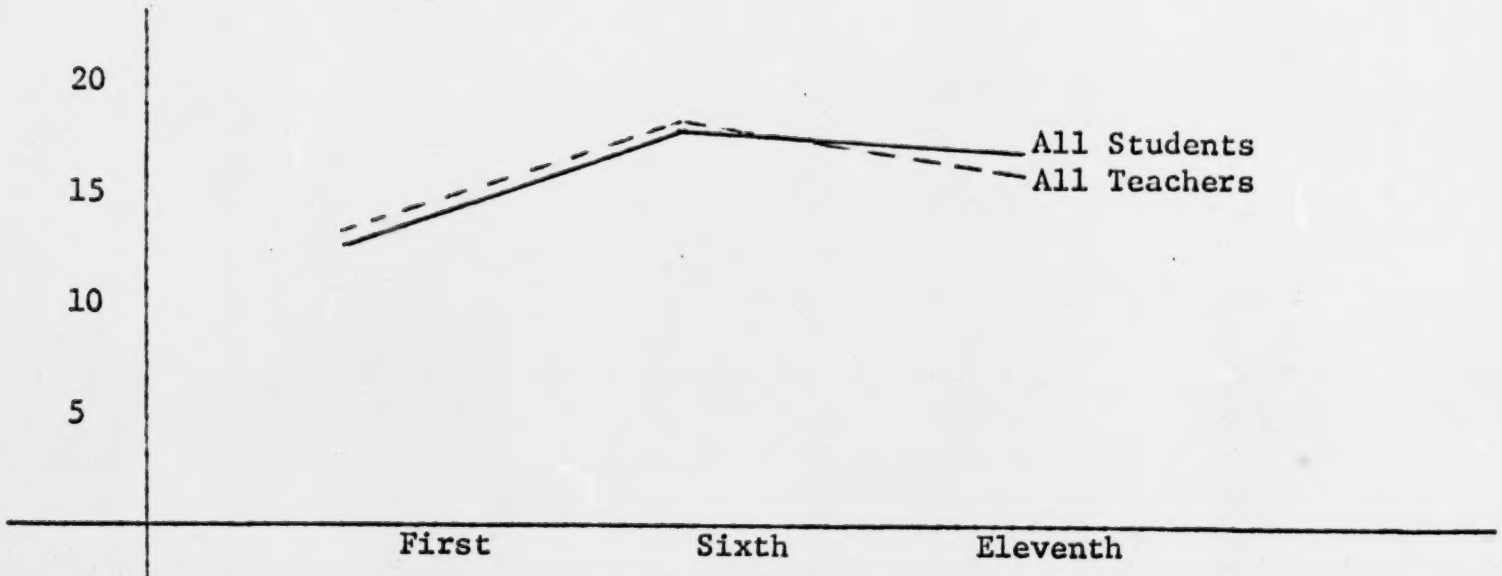

Figure VII. Percent of adjoining in the speech of teachers and pupils by grade level.

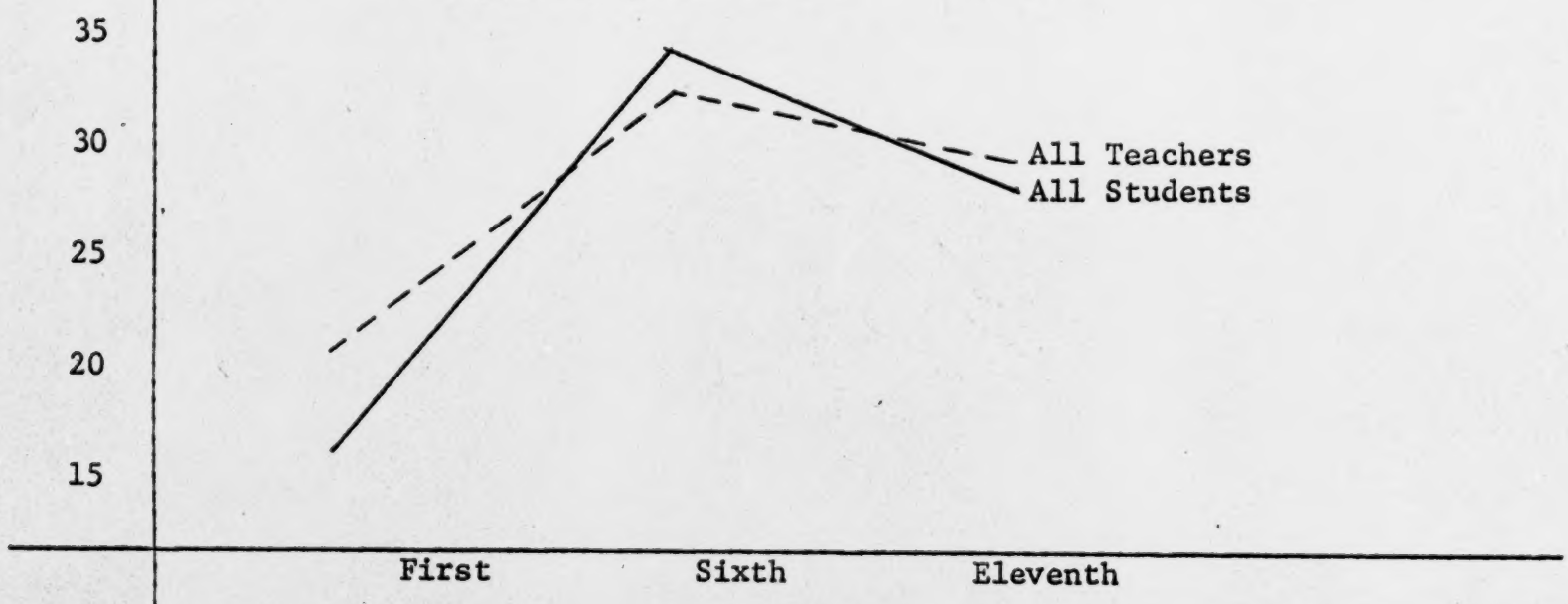

Figure VIII. Percent of conjoining in the speech of teachers and pupils by grade level.

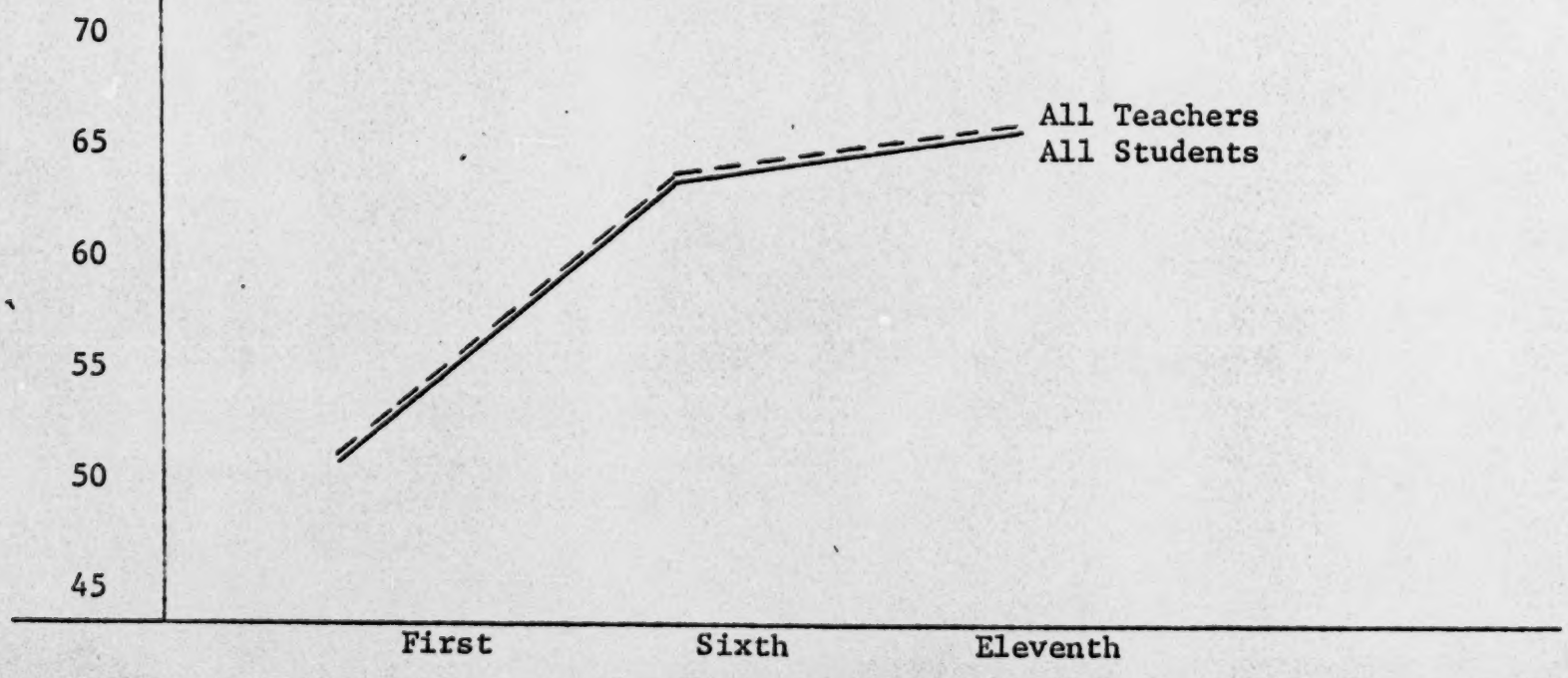

Figure IX. Percent of embedding in the speech of teachers and pupils by grade level.

Handout A

Papers
AERA
6 Feb 1971
Session C46
0830

GLOSSARY OF TERMS

for

VERBAL INTERACTION IN THE CLASSROOM

Biddle
Hays
Guyette
Marlin
Barron
Keyes
Loflin

GLOSSARY

Embedding: The combination of at least two simplex sentences so that one simplex (the constituent or embedded sentence) serves a syntactic function (i.e., nominal, modifier, etc.) within the other simplex (the matrix sentence).

Types of embedding

1. for-to complement

   It's all right <u>for</u> Harry <u>to</u> be late.

2. -ing complement

   Nancy enjoys <u>swimming</u>.

3. Possessive -ing complement

   <u>John's riding</u> is terrible.

4. to complement

   Annie started <u>to move</u>.

5. whether, if complement

   Harry asked <u>whether</u> Tom had gone.

   Harry asked <u>if</u> Sue wanted turkey.

6. Wh- complement

   John knew <u>what</u> Helen wanted.

7. That complement

   Mary said <u>that</u> Jim would be late.

8. The fact that complement.

   <u>The fact that</u> I am a woman is irrelevant.

9. Possessive

   <u>Jim's</u> house is on the corner.

10. Relative

    The girl <u>who</u> left was Pat.

11. Appositive

The word seizing has many meanings.

12. Comparative

Tom is friendlier than Bob.

13. Verbal noun

The struggle for civil rights continues.

Conjoining: Two source sentences are joined together by the conjoining links and, but, or, or and/or or their meaning equivalents. Conjoining may occur with or without deletion. In all the examples below the words in parentheses have been deleted from the spoken sentence.

1. And (Additive)

Tom left and Mary stayed. (without deletion)

Tom (left) and Mary left. (with deletion)

2. But (Adversative)

Jim danced, however Sue just sat. (without deletion)

Jim danced but Sue didn't (dance). (with deletion)

3. Or (Disjunctive)

Mark must go or I'll stay home. (without deletion)

Surely Mark (will go) or Pete will go. (with deletion)

4. And/or (additive disjunctive)

I want to go swimming and/or (Iwant to go)to the movies.
(with deletion)
Linda can wear a dress and/or she can wear slacks.

(without deletion)

Adjoining: Two source sentences are joined together by a function word or link which exhibits the logical relationship of adjoining links (see below). Adjoining may occur with or without deletion.

1. Temporal

I'll go when you go. (without deletion)

I'll go whenever you want to (go). (with deletion)

2. Causal

Because you cried, I cried. (without deletion)

I laughed because you did (cry). (with deletion)

3. Concessional

Although today is Saturday, I'm going to school.

(without deletion)

Even though you won't (sing), I will (sing). (with deletion)

4. Conditional

If you leave I'll cry. (without deletion)

If you leave, I will (leave). (with deletion)

5. Purposive

Study hall is provided for pupils to study in.

(without deletion)

A hammer is for (someone)pounding. (with deletion)

6. Inferential

If it snows then we'll have to stay home.

(without deletion)

We'll come if we can (come). (with deletion)

Natural sentence: An utterance which contains one or more simplex sentences and is the unit in the fine post-edited text which begins with a capital letter and ends with a period.

Simplex sentence: A primitive sentential form irreducible into additional sentences.